REMARKS

Under the Office Action of October 19, 2005, claims 1, 2, and 5-20 were subject to examination. Claims 3-4 were previously canceled. Claims 1-2, 5-7, 9, and 13-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Zernov et al (US 6,097,424), in view of Weinert (US 6,163,309) and in view of Caimi et al (US 4,777,501).

By way of this amendment, the Claims 1, 8, 10-11, and 15 have been minimally amended for the Examiner's benefit to more unmistakably convey what the Applicant regards as his invention with no intention of modifying their scope and to preserve the Applicant's rights for full equivalency. The claims (before and after these amendments), construed in light of the specification, made the meaning of "substantial sensitivity to infrared radiation" abundantly clear to anyone of ordinary skill in the art who read them. In those claims, the meaning of sensitivity to the specified range of infrared radiation is (and consistently has been) to mean sensitivity for "forming images", not sensitivity to malfunctions created by high temperatures (e.g., that created by heat generated by internal lighting apparatus).

By way of this response, it is respectfully requested that the rejection under 35 USC 103(a) be reconsidered and withdrawn because the Office Action fails to establish the necessary elements for a case of obviousness.

First of all, the Action erroneously construes many aspects of the prior art as teaching those claimed by the present invention. More particularly, in section 4, 2nd paragraph of the Office Action, the Examiner asserts that Zernov, et al. discloses a "solid state imager [that] has substantial sensitivity to infrared lights that operate in the range of 700-900 nanometers". However, the lines cited in Zernov et al., 49-60 of col. 6, say nothing whatsoever about their solid state imagers themselves being substantially sensitive to forming images from infrared radiation in that range.

Zernov, et al. does not make any reference to the use of infrared-sensitive imagers anywhere in its disclosure, and thus one cannot sensibly assume that Zernov et al. teaches their use. Moreover, Zernov, et al. does not acknowledge the effects attributed to the use of non-standard, *substantially* IR-sensitive *imagers*. Without acknowledging the enormous effect in the appearance they have to the viewer, it is clearly unreasonable to infer that Zernov, et al. teaches or intended to teach the use of the modified, substantially IR-sensitive imagers as taught only in the present invention.

Furthermore, there are highly plausible reasons for Zernov, et al.'s use of lights operating in the designated IR region in conjunction with standard visible-light imagers.

These imminently plausible reasons are based on the knowledge of those of ordinary skill in the art that bright visible lights can be disturbing to sea life and that avoiding such disturbances is desirable when operating underwater viewing instruments (as explained on page 2, paragraph 2 of the present Application). In addition, one of ordinary skill in the art would know that typical IR lights commonly emanate small amounts of visible red light and that many ordinary cameras using IR cut-off filters are nevertheless slightly sensitive to IR radiation. This explains why Zernov, et al. realize only a moderate increase in "ambient light" and potential improvement of only a "few feet" in visibility (see Zernov, et al., col. 6, lines 49-60). Since Zernov, et al. is silent on the sensitivity of its imagers, makes no mention of the dramatic effect resulting from imagers substantially sensitive to IR, and would have highly plausible reasons for limiting themselves to standard *visible*-light imagers, the Action makes a wholly unfounded leap by equating the teachings of Zernov, et al. to have the substantially IR-sensitive imagers taught and claimed by the Applicant. The rejections under 35 USC 103 are therefore unsupported and should be withdrawn.

The secondary reference Weinert also fails to teach elements upon which the rejection relies and should not be applied in rejecting the claims especially as now amended. Moreover, modifying Zernov, et al. in the manner suggested by the Examiner results at best in a more complicated system than claimed by the Applicant and at worst in a wholly inoperative system. Although Weinert purports to teach a system which is sensitive over a broad spectrum of radiation, including the relied upon range for IR radiation (700 nm to 12 μm) (See col. 3, lines 10-14 of Weinert), the published specifications for the imager advocated by Weinert (Mitsubishi Electronics IR-M700) indicates an entirely different range of radiation (1.2 μm to 5.9 μm) (Available at http://www.infratec.de/thermographi/19_de.html and http://www.photonics.com/spectra/newprods/XQ/ASP/newprodidi.166/QX/read.htm). Since the purported teachings by Weinert would be inoperative as described, they are improperly relied upon to anticipate the presently claimed invention. Moreover, because of the high attenuation of radiation in water within the taught operating range (1.2 to 5.9 μm), the imager advocated by Weinert would be virtually useless in an underwater environment. In addition, the combination advocated would require more than one solid state imager and its attendant optical systems and image processing requirements, so such a combination would necessarily be more complex and expensive.

The Office Action conveys a similarly flawed analysis when it applies the other secondary reference, Caimi, et al., to reject the element of a solid state imager having an operating mode wherein said solid state imager has substantial sensitivity to infrared radiation, as in claims 1 and 15, and second operating mode in which it is sensitive to visible radiation as specified in claims 5 and 17. Caimi, et al. discloses the use of separate "light *sources*" which emit different wavelengths of radiation. However, Caimi et al. in no manner discloses a single solid state *imager* with more than one operating mode that controls an *imager*'s sensitivity to light. The Office Action claims that "it would have been obvious...to modify the system of Zernov, et al. by using the switching device as taught by Caimi, et al. to operate the camera system with different emitting radiation wavelengths..." (See pg. 4, last paragraph of the Action). However, the present application claims a "single solid state imager having an operating mode wherein said solid state *imager* has substantial *sensitivity* to infrared radiation within the range from about 700 to about 1000nm" (claim 1 of the present application), not merely a "camera system with different *emitting* radiation wavelengths." Because the Office Action improperly misconstrues the elements of the presently claimed invention and erroneously compares them to non-analogous elements of Caimi, et al., the current rejections under 35 USC 103 are not supported and should therefore be withdrawn.

The Action also fails to provide any "suggestion or motivation" for combining the teachings of Zernov et al. and the secondary reference Weinert, thus failing to meet its burden of a prima facie case under 35 USC 103. Moreover, there are no reasonable motivations for combining Zernov et al., a relatively compact underwater viewing system, with the complicated navigational system of Weinert, which is designed for integration into large *above-water* transportation vehicles. Because the Examiner has not and cannot provide any motivation for combining these references, the 35 USC 103 rejections are unfounded and should be withdrawn.

In view of the arguments above, Applicant believes that the rejections should be withdrawn and that a prompt Notice of Allowance be issued.

Respectfully submitted,

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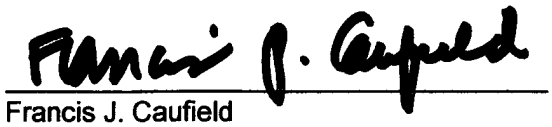
Date



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